

Rec'd PCT/PTO 22 JUN 2005

540070

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 July 2004 (29.07.2004)

PCT

(10) International Publication Number
WO 2004/064026 A2

(51) International Patent Classification⁷:

G09G

(21) International Application Number:

PCT/US2004/000452

(22) International Filing Date: 9 January 2004 (09.01.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/438,905 9 January 2003 (09.01.2003) US

(71) Applicant (for all designated States except US):
AERIELLE GROUP INTERNATIONAL INC.
[US/US]; 10350 Johnson Avenue, Cupertino, CA 95014
(US).

(71) Applicants and

(72) Inventors: COHEN, Arthur, L. [US/US]; 10350 Johnson
Avenue, Cupertino, CA 95014 (US). GLISSMAN, John
[US/US]; P.O. Box 548, Valley Ford, CA 94972 (US).

(74) Agents: JOHNSON, Larry, D. et al.; Johnson & Stain-
brook, LLP, 3550 Round Barn Blvd., Suite 203, Santa Rosa,
CA 95403 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2004/064026 A2

(54) Title: CIRCUIT AND METHOD FOR PROVIDING AN AUTO-OFF AND/OR AUTO-ON CAPABILITY FOR AN AUDIO DEVICE

(57) Abstract: A circuit and method of providing an auto-on and/or auto-off capability for an audio device, of a type having an audio plug which mates with the output jack of an audio source. The portable transmitter modulates audio signals from the audio source onto a carrier and transmits them to a receiver. The auto-on and auto-off capability is provided to prolong battery life and degradation of the transmitter circuit and comprises pinching off a FET when the circuit is in an "off" state. This occurs when a pre-determined threshold in a capacitor is reached by not discharging that capacitor. The capacitor is discharged by dropping a comparator input below a pre-determined threshold limit when presented with an audio peak and wherein the drop in value causes the comparator output to go low, causing the capacitor to discharge and causing the FET to supply power to the regulator.

Recd PCT/PTO 22 JUN 2005

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
29 July 2004 (29.07.2004)

PCT

(10) International Publication Number
WO 2004/064026 A3

(51) International Patent Classification⁷: **H03F 21/00,**
G10H 1/00

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(21) International Application Number:
PCT/US2004/000452

(22) International Filing Date: 9 January 2004 (09.01.2004)

(25) Filing Language: English

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(26) Publication Language: English

(30) Priority Data:
60/438,905 9 January 2003 (09.01.2003) US

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

(71) Applicant (for all designated States except US):
AERIELLE GROUP INTERNATIONAL INC.
[US/US]; 10350 Johnson Avenue, Cupertino, CA 95014
(US).

Published:

— with international search report

(71) Applicants and

(72) Inventors: **COHEN, Arthur, L.** [US/US]; 10350 Johnson Avenue, Cupertino, CA 95014 (US). **GLISSMAN, John** [US/US]; P.O. Box 548, Valley Ford, CA 94972 (US).

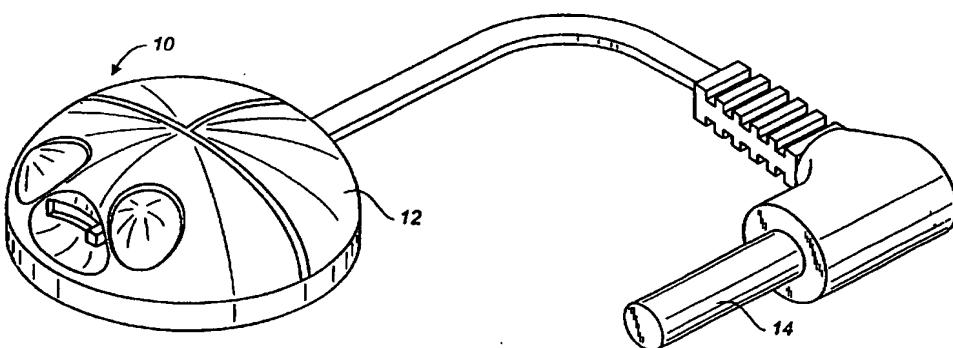
(74) Agents: **JOHNSON, Larry, D.** et al.; Johnson & Stainbrook, LLP, 3558 Round Barn Blvd., Suite 203, Santa Rosa, CA 95403 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

(88) Date of publication of the international search report:
11 November 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CIRCUIT AND METHOD FOR PROVIDING AN AUTO-OFF AND/OR AUTO-ON CAPABILITY FOR AN AUDIO DEVICE



WO 2004/064026 A3

(57) Abstract: A circuit (Figs. 2A-2D) and method of providing an auto-on and/or auto-off capability for an audio device, of a type having an audio plug (14) which mates with the output jack of an audio source. The portable transmitter (10) modulates audio signals from the audio source onto a carrier and transmits them to a receiver. The auto-on and auto-off capability is provided to prolong battery life and degradation of the transmitter circuit and comprises pinching off a FET (Q2) when the circuit is in an "off" state. This occurs when a pre-determined threshold in a capacitor (C29) is reached by not discharging that capacitor. The capacitor (C29) is discharged by dropping a comparator input below a pre-determined threshold limit when presented with an audio peak and wherein the drop in value causes the comparator output to go low, causing the capacitor to discharge and causing the FET (Q2) to supply power to the regulator.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/00452

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H03F 21/00; G10H 1/00
 US CL : 381/120, 118, 55, 77, 79, 110, 123; 307/125, 130

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 381/120, 118, 55, 77, 79, 110, 123; 307/125, 130

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 None.

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,413,290 A (FURUTA) 01 November 1983 (01.11.1983), see entire document.	1-14
Y	US 4,536,808 A (FUJIBAYASHI) 20 August 1985 (20.08.1985), see Fig. 2 and its description on column 2.	1-14
A	US 5,022,305 A (BUTLER) 11 June 1991 (11.06.1991), see entire document.	1-14
A	US 6,304,008 B1 (GOTO et al) 16 October 2001 (16.10.2001), see entire document.	1-14

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
E earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means		
P document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search	Date of mailing of the international search report
---	--

23 July 2004 (23.07.2004)

24 AUG 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450

Faxsimile No. (703)305-3230

Authorized officer

Xu Mei

Telephone No. 703-305-3900

INTERNATIONAL SEARCH REPORT

PCT/US04/00452

Continuation of B. FIELDS SEARCHED Item 3:

BRS search.

Search terms: auto-on, auto-off, FET, portable transmitter, capacitor, pinch off, threshold, audio peak, discharge.